

CLAIMS

1. Method for determining the angles of oblique and arched distortion of a textile fabric or similar, with the use of at least one optical detector with axes of symmetry orientated with respect to the fabric, characterised by the following steps:
 - impulse illumination of an area of the fabric or similar with a light source;
 - acquisition, in digital form, of a real image of an area of the fabric or similar, irrespectively of the orientation of said optical detector with regard to the fabric, with illumination of said fabric for just the time necessary to acquire the image;
 - rotation of the image and compensation for the orientation of the axes of symmetry of the optical detector with regard to the fabric;
 - storing of said image on memory devices inside the optical detector;
 - application to said image of algorithms useful for increasing the reliability of the results of subsequent processing;
 - application of the two-dimensional Fourier transformation to the recorded image;
 - calculation of the angle of local distortion by analysis of the two-dimensional spectrum of the

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Fourier transformation; and

- calculation of the angles of oblique and arched distortion, starting from the angles of local distortion.

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2. Method according to claim 1, where the value of the local angle is generated only on the request of a central supervision and control system.
3. Method according to claim 1 or 2, in which the illumination of the fabric or similar is carried out with single impulses and the acquisition of the images is synchronised with said impulses.
4. Method according to any of the previous claims, in which the fabric or similar is fixed.
5. Method according to any of the claims 1-3, in which the fabric or similar is in movement.
6. Sensor for determining the angles of oblique and arched distortion of a fabric or similar according to any of the previous claims, characterised by the fact of including within a single functional unit:
 - Focussing optics of the area to be examined;
 - An impulse illuminator;
 - An illuminator control circuit for commanding the duration of the illumination; and
 - An integrated acquisition, processing and communication unit.

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7. Sensor according to claim 6, in which the integrated acquisition, processing and communication unit includes a static matrix photosensitive device.
8. Faller device intended for the treatment of the textile fabric or similar, by means of actuators for controlling correction of the distortion angles, characterised by at least one sensor according to claims 6 and 7 for detecting the local deformations and by a supervision and control system for acquiring and processing the values of said local deformations, and for controlling the actuators of the faller machine.
9. The use of the method and the sensor in claims 1-8 in machines for controlling and certifying the defects in textile fabrics or similar.

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